



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B1/2  
 UNIQUE ID NUMBER: 2CM016  
 COMBUSTOR: DAC  
 ENGINE TYPE: TF

BYPASS RATIO: 5.7  
 PRESSURE RATIO ( $\pi_{00}$ ): 30.2  
 RATED THRUST ( $F_{00}$ ) (kN): 133.5

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	11.3	90.6	43.8	5.6
AS % OF ORIGINAL LIMIT	57.7	76.8	43.6	25.6
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			54.5	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			65.0	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			73.8	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			86.7	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 - DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	1.345	0.10	0.60	27.75	0.5
CLIMB OUT	85	2.2	1.104	0.10	2.50	14.91	0.5
APPROACH	30	4.0	0.369	9.10	38.40	7.02	2.3
IDLE	7	26.0	0.129	1.70	34.00	4.73	3.5
LTO TOTAL FUEL (kg) or EMISSIONS (g)			492	1168	10641	5314	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				8.7	79.5	39.8	4.8
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				8.1-9.4	73.9-85.2	38.8-40.8	4.5-5

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.7-101
TEMPERATURE (K)	293-299
ABS HUMIDITY (kg/kg)	0.0114-0.0129

### FUEL

SPEC	Jet A
H/C	1.93
AROM (%)	16.8

MANUFACTURER: CFM International  
 TEST ORGANIZATION: CFM56 Evaluation Engineering  
 TEST LOCATION: PTO Site IIIC  
 TEST DATES: 15/06/1994-01/07/1994

### REMARKS

1. Ref GE Report CR-797/2.
2. Engine S/N 779131/001 & 779132/001
3. DAC combustor

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)